



# Kristu Jayanti College

AUTONOMOUS

Bengaluru

Reaccredited 'A' Grade by NAAC | Affiliated to Bengaluru North University

## BIOSAFETY GUIDELINES

### General Instructions:

- Ensure that you are dressed appropriately: hair should be tied back and loose clothing that could potentially knock over the equipment or catch alight if too near a flame should be avoided
- Before doing any scientific experiment make sure that you know where the fire extinguishers are in your laboratory
- Do not bring food, gum, drinks including water, or water bottles into the laboratory
- Do not wear valuable electronics or dangling jewelry in the laboratory

### Personal Protection:

- Laboratory coats, gowns, or uniforms must be worn at all times for work in the laboratory
- Appropriate gloves must be worn for all procedures that may involve direct or accidental contact with blood, body fluids, and other potentially infectious materials or infected animals. After use, gloves should be removed aseptically and hands must then be washed
- Minimize the use of sharps. Use needles and scalpels according to appropriate guidelines and precautions
- Personnel must wash their hands after handling infectious materials and biological samples and before they leave the laboratory working areas
- Safety glasses, face shields, or other protective devices must be worn when it is necessary to protect the eyes and face from splashes, impacting objects and sources of artificial ultraviolet radiation
- It is prohibited to wear protective laboratory clothing outside the laboratory, e.g. in canteens, classrooms, libraries, staff rooms, and toilets



  
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- Eating, drinking, applying cosmetics, and handling contact lenses are prohibited in the laboratory working areas

## Procedures

- Pipetting by mouth must be strictly forbidden
- Materials must not be placed in the mouth
- Do not handle broken glass with fingers; use a dustpan and broom
- All spills, accidents, and overt or potential exposures to infectious materials must be reported to the laboratory assistant. A written record of such accidents and incidents should be maintained
- Contaminated liquids must be decontaminated (chemically or physically) before discharge to the sanitary sewer
- If scalpel blades, pins, and knives are used, take care not to cut yourself. If you do cut yourself and draw blood call for assistance
- When working with chemicals and gases that are hazardous a fume hood should be used
- Use proper transport vessels (test tube racks) for moving cultures and solutions in the laboratory, Use leak-proof containers for storage and transport of infectious materials
- Arrange for proper (safe) decontamination and disposal of contaminated material (e.g., in a properly maintained and validated autoclave)
- Take care when pouring liquids or powders from one container to another. When spillages occur information to be given to the lab assistant immediately to assist in cleaning up the spillage
- Take care when using acids. A good safety precaution is to have a solution of sodium bicarbonate in the vicinity to neutralize any spills as quickly as possible
- When lighting a Bunsen burner the correct procedure needs to be followed
- Remember that when heating a substance in a test tube, the mouth of the test tube must face away from you and members of your group
- Do not overheat the solution when heating substances in a test tube



## Biohazardous Waste Management

### Liquids

Liquid wastes may be treated and disposed of by either of the following methods:

Chemical treatment of liquids with disinfectant; disposal via lab sink:

- Add household bleach to the collection vessel so that the bleach makes 10% of the final volume
- Allow a contact time of at least 30 minutes
- Carefully pour the mixture down the lab sink, then thoroughly rinse down the sink with water
- Wear the appropriate PPE for handling bleach and bleach-treated liquids. Lab coat, gloves, and chemical splash goggles are recommended

OR

Autoclave treatment of liquids; disposal via lab sink:

- Place the closed collection vessel in a secondary container and transport it by cart to the autoclave facilities
- Treat by autoclave using the liquids cycle, generally 20-30 min
- Pour cooled, treated liquid down the lab sink followed by a thorough water rinse
- Never autoclave liquids that have had bleach added to them

### Sharps

- Biohazardous sharps waste must be disposed of in a container that is manufactured for the disposal of biohazardous sharps waste: 1) puncture resistant; 2) restricted opening disallowing retrieval of sharps; 3) a lid that can be securely closed once full, and 4) labeled with the universal biohazard symbol.



- All sharps containers must be permanently closed and disposed of when 2/3 full or whenever items do not freely fall into the container. Wipe down the exterior surface of the container with a disinfectant before submission for disposal.
- Disposal of biohazardous sharps will be accomplished through a medical waste disposal contractor. Do not dispose of biohazardous sharps containers in the trash, regardless of treatment status.

### **Solids**

- Non-sharps solid biohazardous waste must be collected for final treatment and disposal in a leak-proof container lined with an autoclavable bag of moderate thickness to prevent punctures.
- The collection container must have a lid or other means of closure and the container must be labeled with the biohazard symbol regardless of the lab's operating biosafety level.

### **Treatment of solid, non-sharps biohazardous waste may occur in two ways:**

- Autoclave the biohazard bags according to posted parameters for bagged waste, allow them to cool to room temp, and place in the designated "Autoclave-treated waste" bins, located in or near the autoclave rooms.
- Pipette wastes may require creative approaches for accumulation before disposal. Serological pipettes and micropipette tips are good examples, as they may not fit some biohazardous waste bins or may present a sharps hazard if they comingle with heavier wastes (e.g., agar plates).

### **Pathological Waste**

- Pipette wastes may require creative approaches for accumulation before disposal.
- Serological pipettes and micropipette tips are good examples, as they may not fit some biohazardous waste bins or may present a sharps hazard if they comingle with heavier wastes (e.g., agar plates).



**Animal tissues must be:**

- Collected in leak-proof, sealed bags. Bags must be red, orange, or embossed with the universal biohazard symbol if the pathological material contains an infectious agent, recombinant/synthetic nucleic acid, or biological toxin.
- Freeze and store tissues for disposal through the respective lab facility.
- Unless otherwise indicated by the Biosafety Office, pathological waste is not to be autoclaved.

**NOTE: Never discard pathological wastes into the trash!**



A handwritten signature in green ink, appearing to read "H. Jayanthi".

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